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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,989	12/01/2003	Visvesvaraya A. Pentakota	TI-37261	1873
23494	7590	08/17/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			TON, MY TRANG	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	

2816

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/724,989

Applicant(s)

PENTAKOTA ET AL.

Examiner

My-Trang N. Ton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 6,7,10,11,18,19,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 and 19 is/are allowed.
- 6) ☒ Claim(s) 6,7,10,11,22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
MY-TRANG NUTON  
PRIMARY EXAMINER

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 112***

Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 6, the limitation "wherein said current amplifier comprises:" should be added before the last paragraph, since "a second transistor" and "a third transistor" (Fig. 9) recited in the last paragraph is clearly a part of the current amplifier (720) of Fig. 7B.

Claim 7 is rendered indefinite by the deficiencies of claim 6.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-11, 22 and 23 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Flannagan (U.S Patent No. 6,031,408).

Flannagan discloses in Fig. 6 a square low clamping circuit including:

Regarding claim 10:

a first transistor (132) designed to be turned on when the voltage level is outside of the specified range (when 132 ON); and

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a current amplifier (135 and 136) drawing a substantial amount of current from the node (121) when the first transistor is turned on (132 ON), which causes the voltage level at the node (121) to be pulled to within the specified range;

biasing circuit (130, 131, 133, 134) generating a bias signal to a gate terminal of the first transistor (132), wherein a voltage level of the bias signal is determined by an upper limit or a lower limit of the specified range,

wherein the current amplifier (135, 136) comprises:

a second transistor (135) and a third transistor (136), wherein a gate terminal of the third transistor (136) is connected to both drain and gate terminals of the second transistor (135), a source terminal of the third transistor (136) is connected to ground ( $V_{ss}$ ), the drain terminal of the second transistor (135) is connected to a drain terminal of the first transistor (132), and a drain terminal of the third transistor (136) is connected to a source terminal of the first transistor (132).

However, this reference does not specifically disclose "a resistor connected between a source terminal of said second transistor and ground" as recited in claim 10.

As noted in the last Office action, It is notoriously well-known in the art that for providing higher resistance and providing more voltage drop in the circuit by insert a resistor between the source terminal of the second transistor (135) and ground ( $V_{ss}$ ). Therefore, it would have been obvious at the time the invention was made for one skilled in the art to insert the resistor between a source terminal of the second transistor (135) and ground ( $V_{ss}$ ) for the purpose of providing more voltage drop and higher

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resistance. (For example: Li (U.S Patent No. 6,836,160) teaches resistor R1 connected between QN and ground (via R2)).

Regarding the limitation of claim 11: each of the second transistor and the third transistor comprises a NMOS transistor (135-136).

Claims 22-23 are similarly rejected as claims 10-11.

### ***Allowable Subject Matter***

Claims 6-7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 18-19 are allowable over the prior art of record.

None of the prior art disclosed or suggested to show the particular structure and/or the particular operation recited in these claims namely: "a gate terminal of said second transistor receiving a second bias voltage" in combination with "the first transistor", the details of "the current amplifier" and "the biasing circuit" as recited in claims 6 and 18.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Trang N. Ton whose telephone number is 571-272-1754. The examiner can normally be reached on 7:00 a.m - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



My-Trang N. Ton  
Primary Examiner  
Art Unit 2816

August 15, 2005